office

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
KNOX CITY, TEXAS

NOTICE OF RELEASE OF BORDEN COUNTY GERMPLASM SAND DROPSEED SELECTED CLASS OF NATURAL GERMPLASM

The Natural Resources Conservation Service, U.S. Department of Agriculture announces the release of a selected ecotype of sand dropseed, *Sporobolus cryptandrus* (Torr.) A.Gray.

As a selected release this plant will be referred to as Borden County Germplasm sand dropseed. It has been assigned the NRCS accession number 9042767. Borden County Germplasm is released as a selected class of certified seed (natural track).

This alternative release procedure is justified because there are presently no commercial varieties of sand dropseed available.

Collection Site Information: Borden County Germplasm was originally collected from seed in 1984 from native plants located approximately 12 miles west of Gail, TX (N. Lat. 32° 45' 23", W Long 101° 38' 48") in Borden County Texas. Elevation at the collection site is approximately 2602 feet; the soil at the collection site is classified as Weymouth Series, Vernon Complex. Average precipitation for the area is around 16 inches. Other plants growing in association included vine mesquite, silver bluestem, and hooded windmill grass. The collection site is located in MLRA 78B - Rolling Plains, Western Part.

Description: Borden County Germplasm Sand dropseed is a weak, perennial, warm-season, native bunchgrass that occurs over much of the US except forested areas of the Southeast and California. Sand dropseed is common in the southern Plains. Plants are slender, 1- 3 ft tall with an open densely flowered panicle. Leaf sheaths are longer than internodes and the upper sheath partly or entirely encloses the seedhead, blades are flat about 1/8 inch wide and taper toward the tip. Leaf blades roll inward as plants mature. Plants reproduce from seed, many of which are held between the stem and sheath until the plant deteriorates. Chromosome numbers reported are 2n=36, 38, and 72.

Method of Breeding and/or Selection: Borden County Germplasm was evaluation against 46 other accessions of the same species. It was selected as the top accession based on survivability, vigor and overall plant performance. At the Plant Materials Center in 1997 seed yield/acre was 247.5 pounds with two harvest and in 1998 seed yield/acre was 550 pounds with two harvests. See attachment 1 for initial and advanced evaluation summaries and seed production figures.

Environmental Impact Assessment: Borden County Germplasm sand dropseed is a selection of naturally occurring germplasm and has been unaltered from its original collection. Borden County Germplasm did not meet the assessment of a plant that would become invasive based on literature review and the attached "Invasive Species Worksheet" (see attachment 2).

Conservation Use: Borden County Germplasm may be used in pure stands or as a component in seed mixtures for range seeding. Sand dropseed reseeds itself readily on ranges following overgrazing or drought. It may be used for stabilizing sandy soils that have high erosion potential. Its forage value is fairly palatable to all livestock. Wildlife can utilize the plants for food and ground nesting cover.

Anticipated Area of Adaptation: Borden County Germplasm's anticipated areas of adaptation is MLRAs 42, 77, 78, 80A,B, 81A,B, and 84B in central and western Texas and western Oklahoma. Sand dropseed is adapted to a wide range of soil types but will perform best on sandy soils, rocky and silty soils, and coarse gravelly soils.

Availability of Plant Materials: Generation 0 seed (equivalent to Breeder seed) will be maintained by the USDA-NRCS Plant Materials Center at Knox City, Texas and is available in limited quantities to interested parties for increase purposes.

References: Gould, F. W 1975. The Grasses of Texas. TAMU Press, College Station.

USDA-SCS, 1971, 100 Native Forage Grasses in 11 Southern States, Ag Handbook No. 139.

USDA-SCS Soil Survey, Borden County Texas, 1975.

Prepared by: USDA-NRCS, Plant Materials Center, 3776 FM 1292, Knox City, TX 79529, 940-658-3922.

Signatures for release of :

Borden County Germplasm sand dropseed (*Sporobolus cryptandrus*)

Name
John P. Burt, State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Temple, Texas

Date

Name
Director, Ecological Sciences Division
United States Department of Agriculture
Natural Resources Conservation Service
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Date

Attachment 1: Summary of Initial and Advanced Evaluation of *Sporobolus cryptandrus*, sand dropseed

Initial Evaluation Summary

Accession - Origin		Foliage	Fol.Ht.	Seed Amt	Seed Fill	%Stand	Vigor
	9035001	6.25	16	4	5	86.25	5.11
	9042845	5.5	18	3.66	3.66	86.25	5
	9042822	6.5	14	5	5	88.75	5
	9035694	6.75	10	4.33	3.66	91.25	5.55
	9035716	4.75	17	4.33	4	60	4.55
	9042659	6	12	4	4	91.25	5.55
	9007096	5.75	13	3.66	4	87.5	4.66
	9035731	4.75	12	4	4	86.25	4.66
9031542 - Cochran Co.TX		5	14	4.66	4	93.75	4.77
	9029537	6	18	5	4.66	77.5	5.44
	9035883	5.25	17	5	5	67.5	4.88
9042859 - Hardeman Co.TX		5	16	3.33	3.66	93.75	4.44
9042650 - LaSalle Co.TX		4	19	3.66	4	71.25	3.66
	9042842	5.5	15	4.33	4.33	81.25	4.66
	9042771	5	16	4.33	4.33	92.5	4.55
	9035722	5.25	10	4.66	4.33	82.5	5.22
	9035823	5.25	14	4.33	4.33	92.5	4.66
	9042777	5	10	4	4.33	91.25	4.55
	9035821	4.5	14	4	4.33	90	4.55
	9041735	5.25	12	4.33	4.33	83.75	4.55
	9042762	5	16	4.66	4.33	90	4.77
	9042865	5.25	11	4.66	4.33	77.5	5.22
	9042801	5	19	4.33	4.33	91.25	4.66
	9035658	4.75	6	4.33	4.33	82.5	4.33
	9035787	5.25	18	4.33	4.33	75	4.33
	9035853	4.25	18	3.66	4.33	65	4.44
	9035721	6.25	11	4.33	4.33	88.75	5.22
	9042927	4.5	22	4.33	4.33	82.5	4.44
	9035820	5	16	3.66	4.33	88.75	4.33
	9035832	5.25	9	4.66	4.33	76.25	5.22
	9042763	5	9	5.5	5	73.75	4.22
	9042820	4.25	25	4.5	5	82.5	4.44
	9042788	4.75	18	4.33	4.33	68.75	4.44
	9035664	5.5	11	4.33	4.33	77.5	4.66
	9035901	4.25	11	4.66	4.66	92.5	4.77
	9035890	5.5	13	4.66	4.33	85	4.88
	9034656	4.25	20	4.33	4.33	73.75	4.55
	9035780	5.75	12	4.33	4.33	82.5	5.22
9035877 - Childress Co.TX		3.75	19	4.5	4.5	95	4.33
	9042787	4.66	15	4.33	4.33	86.25	5
	9035659	4	17	4	4.33	86.25	4.22
9042767 - Borden Co.TX		4.25	15	4.33	4.33	93.75	3.77
	9035914	4.75	16	3.66	4.33	88.75	4.33
	9035783	4.5	19	4.33	4.33	60	4.77
	9042806	4.5	22	4.33	4.33	80	4.44
	9042811	5.25	10	4.66	4.33	88.75	5.11

3 -Year Summary of AE Selections of *Sporobolus cryptandrus*, sand dropseed

Accession	% Survival	Vigor Rating: 1=best to 9=poor
9042767 - Borden Co. TX	84.0	4.5
9042650 - LaSalle Co. TX	59.3	5.7
9035877 - Childress Co. TX	69.2	5.8
9031542 - Cochran Co. TX	59.2	6.7
9042859 - Hardeman Co. TX	66.7	6.5

Initial Seed Increase Production Figures of Borden County Germplasm, sand dropseed

Production Year	Area Planted	Production	Converted Lbs./ac.
1999	.20 ac.	105 lbs.	525 lbs.
1998	.20 ac.	110 lbs.	550 lbs.
1997	.20 ac.	49.5 lbs.	247.5 lbs.
1994 - 1996	Seed collected from AE planting for initial increase		

Attachment 2: Invasive Species Worksheet

Proposed release species: **Borden County Germplasm sand dropseed**

Instructions: Circle item under Yes or No column and follow to conclusion.

	Yes	No
1. Does the species invade elsewhere, outside of North America?	To 13	To 2
2. Is it a specific hybrid with known seed sterility?	To 3	To 4
3. Does it spread quickly by vegetative means?	To 15	To 16
4. Is it native to parts of North America other than the region of the proposed introduction?	To 5	To 6
5. Does it spread quickly by vegetative means?	To 15	To 16
6. Does it grow very rapidly in its first two years?	To 8	To 7
7. Does it reproduce quickly vegetatively?	To 10	To 9
8. Does it reproduce quickly vegetatively?	To 17	To 11
9. Is it in a family or genus with species that are already strongly invasive in North America?	To 15	To 16
10. Do the seeds require pretreatment for germination?	To 12	To 15
11. Do the seeds require pretreatment for germination?	To 15	To 17
12. Is it in a family or genus with species that are already strongly invasive in North America?	To 15	To 16
13. Is it in a family or genus with species that are already strongly invasive in North America?	To 17	To 14
14. Is it native to parts of North America other than the region of the proposed introduction?	To 15	To 17
15. Further analysis/monitoring needed on germplasm		
16. Accept germplasm		
17. Reject germplasm		

Adapted from article - Predicting invasions of woody plants introduced into North America, Conservation Biology Vol. 11:193-203, Feb. 1997.

Reference(s) used for analysis of conclusion:

1. Gould, F. W 1975. The Grasses of Texas. TAMU Press, College Station.
2. USDA-SCS, 1971, 100 Native Forage Grasses in 11 Southern States, Ag Handbook No. 139.
3. Kleiner,E.F., Harper,K,T, Occurance of four major perennial grasses in relation to edaphic factors in a pristine community, J.of Range Management, July 1977.
4. Quinn,J.A., Ward,R.T., Ecological differentiation in sand dropseed, Ecol. Monogr., Winter 1969.
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